

IN THE CLAIMS

This listing of the claim will replace all prior versions and listings of claim in the present application.

Listing of Claims

1. (currently amended) A method for signal transmission between a television camera and a video apparatus which are connected to each other through a transmission cable, said method comprising the steps of:

time division multiplexing at said television camera a video signal and first control signals at a multiplexing period which is one-seventh (1/7) of a clock signal which are obtained from said television camera, by using a first time-division multiplexing circuit, to generate a first serial signal;

transmitting to said video apparatus said first serial signal in a form of first differential signals by using a predetermined first pair of signal lines in said cable;

transmitting said clock ~~a second control~~ signal from said television camera to said video apparatus in a form of second differential signals by using a predetermined second pair of signal lines in said cable;

separating at a first time division de-multiplexing circuit of said video apparatus said first serial signal obtained ~~reproduced from said first differential signals~~ from said first pair of signal lines ~~first signal line~~ into said video signal and said first control signals by using said clock signal reproduced from said second differential signals from said second pair of signal lines by a first de-multiplexing circuit of said video apparatus; and

transmitting to said television camera ~~second control signals in a form of third differential signals~~ ~~third control signals from said video apparatus to~~

said television camera by using a third pair of ~~and fourth~~ signal lines in said cable.

2. (original) The method according to claim 1, wherein said first control signals include control signals used in said video apparatus and said second control signal includes a clock signal for said television camera.

Claim 3 (canceled).

4. (original) The method according to claim 2, wherein said first control signal includes an IP signal.

5. (original) The method according to claim 2, wherein said third control signals include a trigger signal and a control signal for controlling said television camera.

6. (original) The method according to claim 5, wherein said control signal for controlling said television camera includes an IP signal.

Claims 7 and 8 (canceled).

9. (currently amended) An apparatus for signal transmission between a television camera and a video apparatus, comprising:

a first connection circuit which is connected to said television camera;

a second connection circuit which is connected to said video apparatus; and

a transmission cable for electrically connecting said first connection circuit and said second connection circuit to each other, wherein:

wherein said first connection circuit includes: has

a first time-division multiplexing circuit for time division multiplexing an image signal obtained from said television camera and first control signals at a multiplexing period which is one seventh (1/7) of a clock signal to convert said image signal and first control signals and converting them into a first serial signal;

a first differential signal circuit for producing first differential signals of said first serial signal; and

a second differential signal circuit for producing second differential signals of said clock signal.

wherein said second connection circuit includes: has

a first differential signal receiver circuit for reproducing said first serial signal from said first differential signals.

a second differential signal receiver circuit for reproducing said clock signal from said second differential signals.

a first time division de-multiplexing circuit for time division de-multiplexing said time division multiplexed first serial signal, reproduced from said first differential signals by said first differential signal receiver circuit, into said image signal and said a first control signals based on said clock signal reproduced from said second differential signals by said second differential signal receiver circuit; and

a third differential signal circuit for producing third differential signals from a second control signal.

wherein said transmission cable has a first pair of signal lines signal line for transmitting said first differential signals produced from said first serial signal, and a second pair of signal lines for transmitting said second differential signals produced from said clock signal, and a third pair of signal lines for transmitting said third differential signals produced from said a second control signal from said video apparatus television camera to said television camera video apparatus.

10. (currently amended) The apparatus according to claim 9, wherein: said second connection circuit has means for transmitting a third control signal which controls said television camera from said video apparatus;

wherein said first connection circuit has means for receiving said third control signal; and

wherein said transmission cable further has a third signal line for transmitting said third control signal.

11. (original) The apparatus according to claim 10, wherein said transmission cable further has a line for supplying power from said video apparatus to said television camera.

Claim 12 (canceled).

13. (currently amended) The apparatus according to claim 9, wherein said second connection circuit has a second time division multiplexing circuit for time-division multiplexing trigger signals obtained from said video apparatus into multiplexed trigger signals and transmitting said multiplexed trigger signals on ~~onto~~ said third signal line; and

wherein said first connection circuit has a second time division de-multiplexing circuit for time division de-multiplexing said multiplexed trigger signal obtained from said third signal line.

14. (original) The apparatus according to claim 10, said third control signal includes a signal for controlling exposure time and/or exposure start time of said television camera.

15. (original) The apparatus according to claim 10, wherein said third control signal includes a signal for controlling an image sampling period for images picked up by said television camera.

16. (currently amended) A television camera apparatus for transmitting signals to a video apparatus comprising:

a camera unit which outputs a video signal and a first and second control signals ~~signal~~ for controlling said video apparatus; and

an interface which time division multiplexes said video signal and said first control signal by using a time-division multiplexing circuit,

wherein said time-division multiplexing circuit time division multiplexes said video signal and said first control signal at a multiplexing period which is

one seventh (1/7) of a clock signal to convert said video signal and first control signal into a serial signal,

wherein said interface includes:

a first differential signal circuit for producing first differential signals of said serial signal, and

a second differential signal circuit for producing second differential signals of said clock signal,

wherein said interface receives said a second control signal, and transmits said first differential signals produced from said serial signal and said second differential signals produced from said clock second-control signal to said video apparatus which time division de-multiplexes said serial signal reproduced from said first differential signals into said first control signal and said video signal based on said clock signal reproduced from said second differential signals and receives said second control signal.

17. (original) The television camera according to claim 16, wherein said first control signal includes control signals used in said video apparatus and said second control signal includes a clock signal for said television camera.

Claim 18 (canceled).

19. (original) The television camera according to claim 17, wherein said first control signal includes an IP signal.

20. (original) The television camera according to claim 16, wherein said interface receives third control signals from said video apparatus for controlling said camera unit.

21. (original) The television camera according to claim 17, wherein said third control signals include a trigger signal and a control signal for controlling said camera unit.

22. (original) The television camera according to claim 21, wherein said control signal for controlling said camera unit includes an IP signal.

Claims 23 and 24 (canceled).

25. (currently amended) A method for transmission between a television camera apparatus and a video apparatus comprising the steps of:
outputting from a camera unit a video signal and ~~a first and second~~
control signals signal for controlling said video apparatus;

time division multiplexing said video signal and said first control signal
by using a time-division multiplexing circuit into a serial signal;

wherein said time-division multiplexing circuit time division multiplexes
said video signal and said first control signal at a multiplexing period which is
one seventh (1/7) of a clock signal to convert said video signal and first
control signal into said serial signal.

producing first differential signals of said serial signal by use of a first
differential signal circuit;

producing second differential signals of said clock signal by use of a second differential signal circuit;

receiving said ~~a~~ second control signal; and

transmitting said first differential signals produced from said serial signal and said second differential signals produced from said clock said second control signal to said video apparatus which time division de- multiplexes said serial signal reproduced from said first differential signals into said first control signal and said video signal based on said clock signal reproduced from said second differential signals and receives said second control signal.

26. (original) The method according to claim 25, wherein said first control signal includes control signals used in said video apparatus and said second control signal includes ~~a~~ said clock signal for said television camera.

Claim 27 (canceled).

28. (original) The method according to claim 26, wherein said first control signal includes an IP signal.

29. (original) The method according to claim 26, further comprising the step of:

receiving third control signals from said video apparatus for controlling said camera unit.

30. (original) The method according to claim 26, wherein said third control signals include a trigger signal and a control signal for controlling said camera unit.

31. (original) The method according to claim 30, wherein said control signal for controlling said camera unit includes an IP signal.

Claims 32 and 33 (canceled).